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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,499	10/23/2000	Joshua Coates	SCAL.P0001	1575

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EXAMINER	
HWANG, JOON H	

ART UNIT	PAPER NUMBER
2166	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/695,499	COATES ET AL.	
	Examiner	Art Unit	
	Joon H. Hwang	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *41-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The applicants amended claims 41-42, 44, 48, and 52 and added new claims 60-62 in the amendment received on 12/13/04.

The pending claims are 41-62.

Response to Arguments

2. Applicant's arguments with respect to claims 41, 48, and 52 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 41-42 and 48-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inniss et al. (U.S. Patent No. 5,708,832) in view of Wilson (U.S. Patent No. 6,718,347).

With respect to claim 41, Inniss teaches a plurality of storage centers each having a local file system, the storage centers located and coupled to each other through a network and a client, each of the storage centers to store a plurality of files in the local file system (i.e., a plurality of servers, such as server B and server C in fig 2, each having a local file system, such as OS/4000 in fig. 3, lines 41-67 in col. 3, lines 1-11 and 25-46 in col. 4, and lines 21-43 in col. 5). Inniss teaches a virtual file system ("VFS") to store file system information for the local file systems (i.e., a server A 24 in

fig. 3, lines 14-40 in col. 1 and lines 25-61 in col. 3), the VFS to indicate to the client a storage resource locator ("SRL") including an identification for a storage center via the VFS and file identifier associated with contents of the file to uniquely identify the file stored at the storage center (lines 25-40 in col. 3, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and line 47 in col. 6 thru line 4 in col. 7), the client to access the storage center via the VFS over the network to manage the plurality of files via the VFS with SRL (lines 25-61 in col. 3, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and line 47 in col. 6 thru line 4 in col. 7). Inniss does not explicitly disclose a wide area, public access network and the storage centers located in geographically disparate locations. However, Wilson teaches a wide area, public access network among storage systems and a client, a public access network address for a server, and storage systems located in geographically disparate locations (line 35 in col. 28 thru line 7 in col. 29, fig. 12, lines 19-25 in col. 1, line 61 in col. 1 thru line 13 in col. 2, lines 44-67 in col. 7, and lines 35-42 in col. 9) in order to provide a less expensive implementation of the network system. Therefore, based on Inniss in view of Wilson, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Wilson to the system of Inniss in order to provide a less expensive implementation of the network system.

With respect to claim 42, Inniss teaches a storage port at the client to access the VFS and the storage centers, the storage port to translate a client file system request to a local file system request including the file identifier to identify the file in the local file system (i.e., the network file system (NFS) 36 in fig. 3 translates a OS/2 request to a

NFS request, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and lines 44-59 in col. 5).

With respect to claim 48, Inniss teaches a plurality of storage centers interconnected over a network with each other and with a virtual file system ("VFS") client, the storage centers having local file system management (i.e., a plurality of servers, such as server B and server C in fig 2, each having a local file system, such as OS/4000 in fig. 3, lines 41-67 in col. 3, lines 1-11 and 25-46 in col. 4, and lines 21-43 in col. 5), the VFS as aggregation of the local file system managements of the storage centers (i.e., a server A 24 in fig. 3, lines 14-40 in col. 1 and lines 25-61 in col. 3). Inniss teaches a storage port mounted at a client machine to interconnect the VFS client to the storage centers (i.e., the network file system (NFS) 36 in fig. 3 mounted at a client machine, line 62 in col. 3 thru line 11 in col. 4, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and lines 44-59 in col. 5), the client machine having a local file system management (i.e., OS/2 in fig. 3, line 62 in col. 3 thru line 11 in col. 4), the storage port to translate a file request on the client machine from a format according to the local file system of the client machine to a file request format according to the VFS, including the storage port to generate a file identifier associated with contents of the file and an identification of the storage center (i.e., the network file system (NFS) 36 in fig. 3 translates a OS/2 request to a NFS request, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and lines 44-59 in col. 5), the storage port to further transmit the translated file request to the storage center indicated by the identification and remotely access the identified file from the storage center over the network (lines 25-61 in col. 3,

lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and line 47 in col. 6 thru line 4 in col. 7). Inniss does not explicitly disclose a wide area, public access network and the storage centers located in geographically separate locations. However, Wilson teaches a wide area, public access network among storage systems and a client, a public access network address for a server, and storage systems located in geographically separate locations (line 35 in col. 28 thru line 7 in col. 29, fig. 12, lines 19-25 in col. 1, line 61 in col. 1 thru line 13 in col. 2, lines 44-67 in col. 7, and lines 35-42 in col. 9) in order to provide a less expensive implementation of the network system. Therefore, based on Inniss in view of Wilson, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Wilson to the system of Inniss in order to provide a less expensive implementation of the network system.

With respect to claim 49, Inniss discloses the claimed subject matter as discussed above except the Internet. However, Wilson teaches the wide area, public access network comprises the Internet (line 35 in col. 28 thru line 7 in col. 29). Therefore, the limitations of claim 49 are rejected in the analysis of claim 48 above, and the claim is rejected on that basis.

With respect to claim 50, Inniss discloses the claimed subject matter as discussed above except a web browser. However, Wilson teaches the client file request is generated with a web browser on the client machine and an Internet address of the storage (line 35 in col. 28 thru line 7 in col. 29, fig. 12, lines 19-25 in col. 1, line 61 in col. 1 thru line 13 in col. 2, and lines 44-67 in col. 7). Therefore, the limitations of

claim 50 are rejected in the analysis of claim 49 above, and the claim is rejected on that basis.

With respect to claim 51, Inniss discloses the claimed subject matter as discussed above except a Hypertext Transport Protocol ("HTTP")-compliant string. However, Wilson teaches generating a Hypertext Transport Protocol ("HTTP")-compliant string to transmit over the wide area, public access network to the storage (line 35 in col. 28 thru line 7 in col. 29, fig. 12, lines 19-25 in col. 1, line 61 in col. 1 thru line 13 in col. 2, and lines 44-67 in col. 7). Therefore, the limitations of claim 51 are rejected in the analysis of claim 48 above, and the claim is rejected on that basis.

With respect to claim 52, Inniss teaches receiving a file request for a file according to a format of a local file system (i.e., OS/2 in fig. 3, line 62 in col. 3 thru line 11 in col. 4, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and lines 44-59 in col. 5). Inniss teaches determining that the file is stored remotely from the local file system at a storage center (i.e., a file is stored at other server system, fig. 3, lines 25-61 in col. 3, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and line 47 in col. 6 thru line 4 in col. 7). Inniss teaches translating the file request to a format of a virtual file system in response to determining that the file is stored remotely from the local file system, including generating a file identifier associated with contents of the file and an identification of the storage center, the storage center coupled with the local file system over a network (i.e., the network file system (NFS) 36 in fig. 3 translates a OS/2 request to a NFS request, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, lines 44-59 in col. 5, and line 47 in col. 6 thru line 4 in col. 7). Inniss teaches transmitting the

translated file request to the storage center over the network and accessing the file at the storage center over the network (lines 25-61 in col. 3, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and line 47 in col. 6 thru line 4 in col. 7). Inniss does not explicitly disclose a wide area, open access network and the storage centers located in geographically remote locations. However, Wilson teaches a wide area, open access network among storage systems and a client, a network address for a server on the open access network, and storage systems located in geographically remote locations (line 35 in col. 28 thru line 7 in col. 29, fig. 12, lines 19-25 in col. 1, line 61 in col. 1 thru line 13 in col. 2, lines 44-67 in col. 7, and lines 35-42 in col. 9) in order to provide a less expensive implementation of the network system. Therefore, based on Inniss in view of Wilson, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Wilson to the system of Inniss in order to provide a less expensive implementation of the network system.

With respect to claim 53, Inniss discloses the claimed subject matter as discussed above except the Internet. However, Wilson teaches the wide area, open access network comprises the Internet (line 35 in col. 28 thru line 7 in col. 29). Therefore, the limitations of claim 53 are rejected in the analysis of claim 52 above, and the claim is rejected on that basis.

With respect to claim 54, Inniss discloses the claimed subject matter as discussed above except a web browser. However, Wilson teaches generating an Internet address of the storage and accessing the file over the Internet with a web browser (line 35 in col. 28 thru line 7 in col. 29, fig. 12, lines 19-25 in col. 1, line 61 in

col. 1 thru line 13 in col. 2, and lines 44-67 in col. 7). Therefore, the limitations of claim 54 are rejected in the analysis of claim 53 above, and the claim is rejected on that basis.

With respect to claim 55, Inniss discloses the claimed subject matter as discussed above except a Hypertext Transport Protocol ("HTTP")-compliant string. However, Wilson teaches generating a Hypertext Transport Protocol ("HTTP")-compliant string to transmit over the wide area, open access network to the storage (line 35 in col. 28 thru line 7 in col. 29, fig. 12, lines 19-25 in col. 1, line 61 in col. 1 thru line 13 in col. 2, and lines 44-67 in col. 7). Therefore, the limitations of claim 55 are rejected in the analysis of claim 52 above, and the claim is rejected on that basis.

5. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inniss et al. (U.S. Patent No. 5,708,832) in view of Wilson (U.S. Patent No. 6,718,347), and further in view of Nazari (U.S. Patent No. 6,405,201).

With respect to claim 43, Inniss and Wilson disclose the claimed subject matter as discussed above except an additional storage port. However, Nazari teaches an additional storage port to access storage, the client to dynamically failover from the storage port to the additional storage port in the event of a failure of the storage port (i.e., if a primary file system fails, a secondary file system takes its place, lines 37-44 in col. 4 and fig. 1) in order to provide a fault-tolerant file system. Therefore, based on Inniss in view of Wilson, and further in view of Nazari, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Nazari to the system of Inniss in order to provide a fault-tolerant file system.

6. Claims 44-47 and 56-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inniss et al. (U.S. Patent No. 5,708,832) in view of Wilson (U.S. Patent No. 6,718,347), and further in view of Popelka et al. (U.S. Patent No. 6,081,883).

With respect to claim 44, Inniss and Wilson disclose the claimed subject matter as discussed above except a plurality of distributed object storage managers and storage nodes in a storage center. However, Popelka teaches a plurality of distributed object storage managers (DOSMs) to receive requests to access the storage center (i.e., a plurality of network processors 110 in fig. 1 in a computer system, line 66 in col. 2 thru line 7 in col. 3 and lines 45-58 in col. 4), and a storage cluster of intelligent storage nodes to store files of the network storage system and service access requests from the DOSMs, each intelligent node including a processor core and a plurality of storage devices (i.e., a FSP node 150 in fig. 1 includes a processor and storage devices, lines 42-54 in col. 2, lines 35-58 in col. 5, lines 20-39 in col. 6, lines 25-39 in col. 11, and fig. 4) in order to provide a scalable computer system. Therefore, based on Inniss in view of Wilson, and further in view of Popelka, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Popelka to the system of Inniss in order to provide a scalable computer system.

With respect to claim 45, Inniss teaches a storage center to receive requests from the VFS to access the storage center (lines 25-61 in col. 3, lines 25-46 in col. 4, line 65 in col. 4 thru line 20 in col. 5, and line 47 in col. 6 thru line 4 in col. 7). Inniss

does not explicitly disclose a multi-cast protocol. However, Wilson teaches a multi-cast feature wherein data can be transferred from a source to more than one destination (lines 19-34 in col. 33) so that in one case, data consistency can be maintained between the source and the destinations. Inniss and Wilson do not explicitly disclose maintaining file information at the DOSMs regarding files stored in the intelligent storage nodes. However, Popelka teaches maintaining file information at the DOSMs regarding files stored in the intelligent storage nodes (i.e., read cache 111 in fig. 1). Therefore, the limitations of claim 45 are rejected in the analysis of claim 44 above, and the claim is rejected on that basis.

With respect to claim 46, Inniss and Wilson do not explicitly disclose the DOSMs comprising a data cache to cache file stored in the intelligent nodes. However, Popelka teaches the DOSMs comprising a data cache to cache file stored in the intelligent nodes (i.e., read cache 111 in fig. 1). Therefore, the limitations of claim 46 are rejected in the analysis of claim 44 above, and the claim is rejected on that basis.

With respect to claim 47, Inniss does not explicitly disclose a load balancing fabric. However, Wilson teaches load balancers (lines 14-25 in col. 2, lines 43-56 in col. 9, lines 32-45 in col. 31, and fig. 3) in order to maximize system performance. Inniss and Wilson do not explicitly disclose loading in the data cache a file requested multiple times. However, Popelka teaches LRU maintenance for a cache teaching caching data for files in high demand (lines 14-16 in col. 12). Therefore, the limitations of claim 47 are rejected in the analysis of claim 44 above, and the claim is rejected on that basis.

With respect to claim 56, Inniss and Wilson disclose the claimed subject matter as discussed above except a plurality of distributed object storage managers and storage nodes in a storage center. However, Popelka teaches selecting one of a plurality of distributed object storage managers (DOSMs) to service a request to access the storage center (i.e., one of a plurality of network processors 110 is selected in fig. 1 in a computer system, line 66 in col. 2 thru line 7 in col. 3 and lines 45-58 in col. 4), and accessing the file on an intelligent storage node of the selected DOSM (i.e., a FSP node 150 in fig. 1, lines 42-54 in col. 2, lines 35-58 in col. 5, lines 20-39 in col. 6, lines 25-39 in col. 11, and fig. 4) in order to provide a scalable computer system. Therefore, based on Inniss in view of Wilson, and further in view of Popelka, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Popelka to the system of Inniss in order to provide a scalable computer system.

With respect to claim 57, Inniss discloses the claimed subject matter as discussed above except a multi-cast protocol. However, Wilson teaches a multi-cast feature wherein data can be transferred from a source to more than one destination (lines 19-34 in col. 33) so that in one case, data consistency can be maintained between the source and the destinations. Inniss and Wilson do not explicitly disclose maintaining file information at the DOSMs regarding files stored in the intelligent storage nodes. However, Popelka teaches maintaining file information at the DOSMs regarding files stored in the intelligent storage nodes (i.e., read cache 111 in fig. 1). Therefore,

the limitations of claim 57 are rejected in the analysis of claim 56 above, and the claim is rejected on that basis.

With respect to claim 58, Inniss teaches caching a file stored in storages (line 60 in col. 5 thru line 12 in col. 6).

With respect to claim 59, Inniss and Wilson do not explicitly disclose selecting a DOSM for an access request based at least in part on demand to access the storage center. However, Popelka teaches selecting a DOSM for an access request based at least in part on demand to access the storage center and LRU maintenance for a cache teaching caching data for files in high demand (i.e., a network processor 110 in fig. 1 is selected based on demand to access to the computer system, line 66 in col. 2 thru line 7 in col. 3, lines 45-58 in col. 4, and lines 14-16 in col. 12). Therefore, the limitations of claim 59 are rejected in the analysis of claims 56 and 58 above, and the claim is rejected on that basis.

7. Claims 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inniss et al. (U.S. Patent No. 5,708,832) in view of Wilson (U.S. Patent No. 6,718,347), and further in view of Mattis et al. (U.S. Patent No. 6,128,627).

With respect to claim 60, Inniss and Wilson disclose the claimed subject matter as discussed above except a digital fingerprint derived from contents of a file. However, Mattis teaches a digital fingerprint derived from contents of a file is utilized in a file request (lines 6-24 in col. 9) in order to easily locate the file. Therefore, based on Inniss in view of Wilson, and further in view of Mattis, it would have been obvious to one

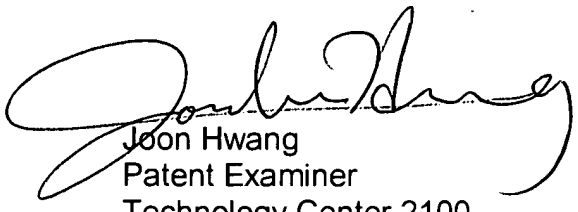
having ordinary skill in the art at the time the invention was made to utilize the teaching of Mattis to the system of Inniss in order to easily locate a requested file.

The limitations of claims 61-62 are rejected in the analysis of claim 60 above, and these claims are rejected on that basis.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joon H. Hwang whose telephone number is 571-272-4036. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joon Hwang
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11/25/05